

CRF Error: Corrected by the STIC Systems Branch

CRF Processing Date: 0580 0423 5/3/02  
 Edited by: DC  
 Verified by: (STIC staff)

Serial Number: 10/006,611

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: **ENTERED**
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other \_\_\_\_\_
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: \_\_\_\_\_
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: \_\_\_\_\_
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: \_\_\_\_\_
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: \_\_\_\_\_
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: \_\_\_\_\_
- ☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as \_\_\_\_\_
- ☐ Inserted mandatory headings, specifically: \_\_\_\_\_
- ☐ Corrected an obvious error in the response, specifically: \_\_\_\_\_
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: \_\_\_\_\_
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted **ending** stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: \_\_\_\_\_
- ☒ Other: Inserted "hard return" to separate the lines at Seq. ID 4 - <2/0>

Notice: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form. 3/1/95



OIFE

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/006,611

DATE: 05/03/2002

TIME: 10:57:22

Input Set : A:\PTO.DC.TXT

Output Set: N:\CRF3\05032002\J006611.raw

```

4 <110> APPLICANT: Nezu, Jun-Ichi
5     Ose, Asuka
6     Jishage, Kou-ichi
7     Jenne, Dieter E.
9 <120> TITLE OF INVENTION: LKB1 GENE KNOCKOUT ANIMALS
11 <130> FILE REFERENCE: 06501-094001
13 <140> CURRENT APPLICATION NUMBER: US 10/006,611
C--> 14 <141> CURRENT FILING DATE: 2002-04-16
16 <150> PRIOR APPLICATION NUMBER: PCT/JP00/03504
17 <151> PRIOR FILING DATE: 2000-05-31
19 <150> PRIOR APPLICATION NUMBER: JP 11/153030
20 <151> PRIOR FILING DATE: 1999-05-31
22 <160> NUMBER OF SEQ ID NOS: 22
24 <170> SOFTWARE: FastSEQ for Windows Version 4.0
26 <210> SEQ ID NO: 1
27 <211> LENGTH: 1795
28 <212> TYPE: DNA
29 <213> ORGANISM: Mus musculus
31 <220> FEATURE:
32 <221> NAME/KEY: CDS
33 <222> LOCATION: (51)...(1358)
35 <400> SEQUENCE: 1
36 aattcggatc caaggcggcc cgaaggacag aggacaaaga gtgggccagg atg gac      56
37                                     Met Asp
38                                     1
40 gtg gcg gac ccc gag ccg ttg ggc ctt ttc tcc gag ggc gag ctg atg      104
41 Val Ala Asp Pro Glu Pro Leu Gly Leu Phe Ser Glu Gly Glu Leu Met
42     5                10                15
44 tcg gtg ggc atg gac acc ttc atc cac cgc atc gac tcc acc gag gta      152
45 Ser Val Gly Met Asp Thr Phe Ile His Arg Ile Asp Ser Thr Glu Val
46     20                25                30
48 atc tac cag ccg cgc cgc aaa cgc gcc aag ctc atc ggc aag tac ctg      200
49 Ile Tyr Gln Pro Arg Arg Lys Arg Ala Lys Leu Ile Gly Lys Tyr Leu
50     35                40                45                50
52 atg ggg gac ctg ctc ggg gag ggc tcg tac ggc aag gtg aag gag gtg      248
53 Met Gly Asp Leu Leu Gly Glu Gly Ser Tyr Gly Lys Val Lys Glu Val
54     55                60                65
56 ctg gac tcc gag acc tta tgc cgc agg gcg gtc aag atc ctc aag aag      296
57 Leu Asp Ser Glu Thr Leu Cys Arg Arg Ala Val Lys Ile Leu Lys Lys
58     70                75                80
60 aaa aag ctg cgc agg atc ccc aat gga gag gcc aac gtc aag aag gag      344
61 Lys Lys Leu Arg Arg Ile Pro Asn Gly Glu Ala Asn Val Lys Lys Glu
62     85                90                95

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/006,611

DATE: 05/03/2002

TIME: 10:57:22

Input Set : A:\PTO.DC.TXT

Output Set: N:\CRF3\05032002\J006611.raw

64	atc	cag	ctg	ctg	cgg	cgg	ctg	cgg	cat	cgg	aat	gtg	atc	cag	ctt	gtg	392
65	Ile	Gln	Leu	Leu	Arg	Arg	Leu	Arg	His	Arg	Asn	Val	Ile	Gln	Leu	Val	
66		100					105					110					
68	gac	gtg	ctg	tac	aat	gag	gag	aag	cag	aag	atg	tat	atg	gtg	atg	gag	440
69	Asp	Val	Leu	Tyr	Asn	Glu	Glu	Lys	Gln	Lys	Met	Tyr	Met	Val	Met	Glu	
70	115					120					125					130	
72	tac	tgc	gta	tgt	ggc	atg	cag	gag	atg	ctg	gac	agt	gtg	ccg	gag	aag	488
73	Tyr	Cys	Val	Cys	Gly	Met	Gln	Glu	Met	Leu	Asp	Ser	Val	Pro	Glu	Lys	
74					135					140					145		
76	cgc	ttc	cct	gtg	tgc	caa	gct	cat	ggg	tac	ttc	cgc	cag	ctg	att	gac	536
77	Arg	Phe	Pro	Val	Cys	Gln	Ala	His	Gly	Tyr	Phe	Arg	Gln	Leu	Ile	Asp	
78					150					155					160		
80	ggc	ctg	gaa	tac	cta	cac	agc	cag	ggc	att	gtt	cac	aag	gac	atc	aag	584
81	Gly	Leu	Glu	Tyr	Leu	His	Ser	Gln	Gly	Ile	Val	His	Lys	Asp	Ile	Lys	
82			165						170					175			
84	ccg	ggc	aac	ctg	cta	ctc	acc	acc	aat	ggc	aca	ctc	aag	atc	tcc	gac	632
85	Pro	Gly	Asn	Leu	Leu	Leu	Thr	Thr	Asn	Gly	Thr	Leu	Lys	Ile	Ser	Asp	
86		180							185					190			
88	ctc	ggt	gtt	gcc	gag	gcc	ctg	cac	cct	ttc	gct	gtg	gat	gac	acc	tgc	680
89	Leu	Gly	Val	Ala	Glu	Ala	Leu	His	Pro	Phe	Ala	Val	Asp	Asp	Thr	Cys	
90	195					200					205					210	
92	cgg	aca	agc	cag	ggc	tcc	ccg	gcc	ttc	cag	cct	cct	gag	att	gcc	aat	728
93	Arg	Thr	Ser	Gln	Gly	Ser	Pro	Ala	Phe	Gln	Pro	Pro	Glu	Ile	Ala	Asn	
94					215					220					225		
96	gga	ctg	gac	acc	ttt	tca	ggt	ttc	aag	gtg	gac	atc	tgg	tca	gct	ggg	776
97	Gly	Leu	Asp	Thr	Phe	Ser	Gly	Phe	Lys	Val	Asp	Ile	Trp	Ser	Ala	Gly	
98			230						235					240			
100	gtc	aca	ctt	tac	aac	atc	acc	acg	ggc	ctg	tac	cca	ttt	gag	ggg	gac	824
101	Val	Thr	Leu	Tyr	Asn	Ile	Thr	Thr	Gly	Leu	Tyr	Pro	Phe	Glu	Gly	Asp	
102			245						250					255			
104	aat	atc	tac	aag	ctc	ttt	gag	aac	att	ggg	aga	gga	gac	ttc	acc	atc	872
105	Asn	Ile	Tyr	Lys	Leu	Phe	Glu	Asn	Ile	Gly	Arg	Gly	Asp	Phe	Thr	Ile	
106		260					265					270					
108	cct	tgt	gac	tgc	ggc	cca	cca	ctc	tct	gac	cta	ctc	cga	ggg	atg	ttg	920
109	Pro	Cys	Asp	Cys	Gly	Pro	Pro	Leu	Ser	Asp	Leu	Leu	Arg	Gly	Met	Leu	
110	275					280					285				290		
112	gag	tat	gag	ccg	gcc	aag	agg	ttc	tcc	atc	cga	cag	att	agg	cag	cac	968
113	Glu	Tyr	Glu	Pro	Ala	Lys	Arg	Phe	Ser	Ile	Arg	Gln	Ile	Arg	Gln	His	
114					295					300					305		
116	agc	tgg	ttc	cgg	aag	aaa	cac	cct	ctg	gct	gag	gcg	ctc	gta	cct	atc	1016
117	Ser	Trp	Phe	Arg	Lys	Lys	His	Pro	Leu	Ala	Glu	Ala	Leu	Val	Pro	Ile	
118			310						315					320			
120	cca	cca	agc	cca	gac	act	aag	gac	cgc	tgg	cgc	agt	atg	act	gta	gtg	1064
121	Pro	Pro	Ser	Pro	Asp	Thr	Lys	Asp	Arg	Trp	Arg	Ser	Met	Thr	Val	Val	
122			325						330					335			
124	ccc	tac	ctg	gag	gac	ctg	cat	ggc	cgt	gcg	gag	gag	gag	gag	gag	gaa	1112
125	Pro	Tyr	Leu	Glu	Asp	Leu	His	Gly	Arg	Ala	Glu	Glu	Glu	Glu	Glu	Glu	
126		340					345				350						
128	gac	ttg	ttt	gac	att	gag	gac	ggc	att	atc	tac	acc	cag	gac	ttc	aca	1160

## RAW SEQUENCE LISTING

DATE: 05/03/2002

PATENT APPLICATION: US/10/006,611

TIME: 10:57:22

Input Set : A:\PTO.DC.TXT

Output Set: N:\CRF3\05032002\J006611.raw

```

129 Asp Leu Phe Asp Ile Glu Asp Gly Ile Ile Tyr Thr Gln Asp Phe Thr
130 355          360          365          370
132 gtg cct gga cag gtc ctg gaa gag gaa gtg ggt cag aat gga cag agc      1208
133 Val Pro Gly Gln Val Leu Glu Glu Glu Val Gly Gln Asn Gly Gln Ser
134          375          380          385
136 cac agt ttg ccc aag gct gtt tgt gtg aat ggc aca gag ccc cag ctc      1256
137 His Ser Leu Pro Lys Ala Val Cys Val Asn Gly Thr Glu Pro Gln Leu
138          390          395          400
140 agc agc aag gtg aag cca gaa ggc cga cct ggc acc gcc aac cct gcg      1304
141 Ser Ser Lys Val Lys Pro Glu Gly Arg Pro Gly Thr Ala Asn Pro Ala
142          405          410          415
144 cgc aag gtg tgc tcc agc aac aag atc cgc cgg ctc tcg gcc tgc aag      1352
145 Arg Lys Val Cys Ser Ser Asn Lys Ile Arg Arg Leu Ser Ala Cys Lys
146          420          425          430
148 cag cag tgactgaggc ctacagtgtg tcatacaggat ctctgggcag gtgtccctgc      1408
149 Gln Gln
150 435
152 aaggtctgggt tttccaggcc tgcctgtcca ctacttcgg gacgttggag ccgagggcgg      1468
153 acctgctgcc ccagaagcac tttatgtcga gaccactggc cggccttgcc tgcattgccgc      1528
154 cctgcgagcc tcgctgtctt tgggttggtt tcttttttt taataaaaca ggtggatttg      1588
155 agctatggct atgaggggtgt ttgaaatat ggagcaggcg gggcacaggg tggcctgcag      1648
156 agaaaaccag agcaaacaaa tatgcagaga catttatgat taaccagaca acacgaccaa      1708
157 ccacagaggg cgcagggcag ggagtgggca ggcactcaca gcgagtctgc cctatctttt      1768
158 ggcaataaat aaagcttggg aaacttg      1795
160 <210> SEQ ID NO: 2
161 <211> LENGTH: 436
162 <212> TYPE: PRT
163 <213> ORGANISM: Mus musculus
165 <400> SEQUENCE: 2
166 Met Asp Val Ala Asp Pro Glu Pro Leu Gly Leu Phe Ser Glu Gly Glu
167 1          5          10          15
168 Leu Met Ser Val Gly Met Asp Thr Phe Ile His Arg Ile Asp Ser Thr
169          20          25          30
170 Glu Val Ile Tyr Gln Pro Arg Arg Lys Arg Ala Lys Leu Ile Gly Lys
171          35          40          45
172 Tyr Leu Met Gly Asp Leu Leu Gly Glu Gly Ser Tyr Gly Lys Val Lys
173          50          55          60
174 Glu Val Leu Asp Ser Glu Thr Leu Cys Arg Arg Ala Val Lys Ile Leu
175 65          70          75          80
176 Lys Lys Lys Lys Leu Arg Arg Ile Pro Asn Gly Glu Ala Asn Val Lys
177          85          90          95
178 Lys Glu Ile Gln Leu Leu Arg Arg Leu Arg His Arg Asn Val Ile Gln
179          100         105         110
180 Leu Val Asp Val Leu Tyr Asn Glu Glu Lys Gln Lys Met Tyr Met Val
181          115         120         125
182 Met Glu Tyr Cys Val Cys Gly Met Gln Glu Met Leu Asp Ser Val Pro
183          130         135         140
184 Glu Lys Arg Phe Pro Val Cys Gln Ala His Gly Tyr Phe Arg Gln Leu
185 145         150         155         160

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/006,611

DATE: 05/03/2002

TIME: 10:57:22

Input Set : A:\PTO.DC.TXT

Output Set: N:\CRF3\05032002\J006611.raw

```

186 Ile Asp Gly Leu Glu Tyr Leu His Ser Gln Gly Ile Val His Lys Asp
187                               165                               170                               175
188 Ile Lys Pro Gly Asn Leu Leu Leu Thr Thr Asn Gly Thr Leu Lys Ile
189                               180                               185                               190
190 Ser Asp Leu Gly Val Ala Glu Ala Leu His Pro Phe Ala Val Asp Asp
191                               195                               200                               205
192 Thr Cys Arg Thr Ser Gln Gly Ser Pro Ala Phe Gln Pro Pro Glu Ile
193                               210                               215                               220
194 Ala Asn Gly Leu Asp Thr Phe Ser Gly Phe Lys Val Asp Ile Trp Ser
195 225                               230                               235                               240
196 Ala Gly Val Thr Leu Tyr Asn Ile Thr Thr Gly Leu Tyr Pro Phe Glu
197                               245                               250                               255
198 Gly Asp Asn Ile Tyr Lys Leu Phe Glu Asn Ile Gly Arg Gly Asp Phe
199                               260                               265                               270
200 Thr Ile Pro Cys Asp Cys Gly Pro Pro Leu Ser Asp Leu Leu Arg Gly
201                               275                               280                               285
202 Met Leu Glu Tyr Glu Pro Ala Lys Arg Phe Ser Ile Arg Gln Ile Arg
203 290                               295                               300
204 Gln His Ser Trp Phe Arg Lys Lys His Pro Leu Ala Glu Ala Leu Val
205 305                               310                               315                               320
206 Pro Ile Pro Pro Ser Pro Asp Thr Lys Asp Arg Trp Arg Ser Met Thr
207                               325                               330                               335
208 Val Val Pro Tyr Leu Glu Asp Leu His Gly Arg Ala Glu Glu Glu Glu
209                               340                               345                               350
210 Glu Glu Asp Leu Phe Asp Ile Glu Asp Gly Ile Ile Tyr Thr Gln Asp
211                               355                               360                               365
212 Phe Thr Val Pro Gly Gln Val Leu Glu Glu Glu Val Gly Gln Asn Gly
213 370                               375                               380
214 Gln Ser His Ser Leu Pro Lys Ala Val Cys Val Asn Gly Thr Glu Pro
215 385                               390                               395                               400
216 Gln Leu Ser Ser Lys Val Lys Pro Glu Gly Arg Pro Gly Thr Ala Asn
217                               405                               410                               415
218 Pro Ala Arg Lys Val Cys Ser Ser Asn Lys Ile Arg Arg Leu Ser Ala
219                               420                               425                               430
220 Cys Lys Gln Gln
221                               435

```

223 &lt;210&gt; SEQ ID NO: 3

224 &lt;211&gt; LENGTH: 5876

225 &lt;212&gt; TYPE: DNA

226 &lt;213&gt; ORGANISM: Mus musculus

228 &lt;220&gt; FEATURE:

229 &lt;221&gt; NAME/KEY: exon

230 &lt;222&gt; LOCATION: (1)...(84)

232 &lt;221&gt; NAME/KEY: intron

233 &lt;222&gt; LOCATION: (85)...(677)

W--&gt; 235 &lt;221&gt; exon

236 &lt;222&gt; LOCATION: (678)...(767)

W--&gt; 238 &lt;221&gt; intron

239 &lt;222&gt; LOCATION: (768)...(1231)

## RAW SEQUENCE LISTING

DATE: 05/03/2002

PATENT APPLICATION: US/10/006,611

TIME: 10:57:22

Input Set : A:\PTO.DC.TXT

Output Set: N:\CRF3\05032002\J006611.raw

```

W--> 241 <221> exon
      242 <222> LOCATION: (1232)...(1364)
W--> 244 <221> intron
      245 <222> LOCATION: (1365)...(1431)
W--> 247 <221> exon
      248 <222> LOCATION: (1432)...(1568)
W--> 250 <221> intron
      251 <222> LOCATION: (1569)...(1852)
W--> 253 <221> exon
      254 <222> LOCATION: (1853)...(1980)
W--> 256 <221> intron
      257 <222> LOCATION: (1981)...(2243)
W--> 259 <221> exon
      260 <222> LOCATION: (2244)...(2301)
W--> 262 <221> intron
      263 <222> LOCATION: (2302)...(3102)
W--> 265 <221> exon
      266 <222> LOCATION: (3103)...(3299)
W--> 268 <221> intron
      269 <222> LOCATION: (3300)...(5103)
W--> 271 <221> exon
      272 <222> LOCATION: (5104)...(5310)
W--> 274 <221> intron
      275 <222> LOCATION: (5311)...(5454)
W--> 277 <221> exon
      278 <222> LOCATION: (5455)...(5876)
W--> 280 <400> 3
      281 ggagatccag ctgctgcggc ggctgcggca tcggaatgtg atccagcttg tggacgtgct      60
      282 gtacaatgag gagaagcaga agatatatcc tgtgggtgga gtgggctggg gtggcccctg      120
      283 tgttaggggc tggaaacctt ctgcaaggcc tctggcagca atagtgtctac atgtcatcct      180
      284 gtggtgcctg tcagctcatc aggcagggga gcaaggcatg gggcttccac ctggtgccag      240
      285 cctgtttctga gcagtgtggc tgggactggg catggcctca cagggacttg gggcctatgt      300
      286 acattgacag ggccccggct ggttctagag gtttccatgc tgcccccttc cagaggtaga      360
      287 ggttgacacag cctacgttgc atctgggcag tcctgggagc attctgagaa cccagtgcc      420
      288 tgcagcccca actcctggta cccatctctc cctgtggcta gtacaccagc tgatttcagt      480
      289 cctgttgtaa tctatgctga ctccatgtgg tccaagtcac tgtggtggtc ttgtggacct      540
      290 tgtgagtact gataggagc gcagaatggc gggagagcag agtgggtggtg gtctgttggc      600
      291 ccagcggggc cctccagacc actgttgcta ggagcagggc tcctgggctt ggtgtgctgc      660
      292 tttccttagc gccctacgta tatggtgatg gagtactgcg tatgtggcat gcaggagatg      720
      293 ctggacagtg tgccggagaa gcgcttccct gtgtgccaaag ctcatgggtg agtgccctgc      780
      294 tgggtgcagg aggagcagcc attgtcagga aaccacaggtg tttctgggcc cccagttttt      840
      295 aaccacagca atgtgcttag ggttacctc ttgttaggcc ctgtggtccc gctgccctgc      900
      296 agagccatag tgggtctgag tcctgttcag tgcctccagg ttcagcagaa tcacatcccc      960
      297 tggttagcag agaacaaagg gaagggaagg gaaggaagca agccagaggg gaaacctggc      1020
      298 tccctgggcc tgggcagcag tgactgccag ttgccctgtg taattttagt ggcccagcct      1080
      299 tctgactctc aggtctgttt gcctgagccc taaacatcta tcaccttgta ggccaggtct      1140
      300 catgagtctc ccaaacttca tatcagactt atgtaggtac catggtatgg gctgagacac      1200
      301 tgtggggcct gagccagtc caccattca ggtacttccg ccagctgatt gacggcctgg      1260
      302 aatacctaca cagccagggc attgttcaca aggacatcaa gccgggcaac ctgctactca      1320

```

## VERIFICATION SUMMARY

PATENT APPLICATION: US/10/006,611

DATE: 05/03/2002

TIME: 10:57:23

Input Set : A:\PTO.DC.TXT

Output Set: N:\CRF3\05032002\J006611.raw

L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:235 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:238 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:241 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:244 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:247 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:250 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:253 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:256 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:259 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:262 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:265 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:268 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:271 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:274 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:277 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:280 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3



**Does Not Comply**  
**Corrected Diskette Needed**

OIPE

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/006,611

DATE: 04/30/2002

TIME: 14:47:06

Input Set : A:\06501-094001.TXT

Output Set: N:\CRF3\04302002\J006611.raw

4 <110> APPLICANT: Nezu, Jun-Ichi  
 5 Ose, Asuka  
 6 Jishage, Kou-ichi  
 7 Jenne, Dieter E.  
 9 <120> TITLE OF INVENTION: LKB1 GENE KNOCKOUT ANIMALS  
 11 <130> FILE REFERENCE: 06501-094001  
 13 <140> CURRENT APPLICATION NUMBER: US 10/006,611  
 C--> 14 <141> CURRENT FILING DATE: 2002-04-16  
 16 <150> PRIOR APPLICATION NUMBER: PCT/JP00/03504  
 17 <151> PRIOR FILING DATE: 2000-05-31  
 19 <150> PRIOR APPLICATION NUMBER: JP 11/153030  
 20 <151> PRIOR FILING DATE: 1999-05-31  
 22 <160> NUMBER OF SEQ ID NOS: 22  
 24 <170> SOFTWARE: FastSEQ for Windows Version 4.0

## ERRORED SEQUENCES

223 <210> SEQ ID NO: 3  
 224 <211> LENGTH: 5876  
 225 <212> TYPE: DNA  
 226 <213> ORGANISM: Mus musculus  
 228 <220> FEATURE:  
 229 <221> NAME/KEY: exon  
 230 <222> LOCATION: (1)...(84)  
 232 <221> NAME/KEY: intron  
 233 <222> LOCATION: (85)...(677)  
 W--> 235 <221> exon  
 236 <222> LOCATION: (678)...(767)  
 W--> 238 <221> intron  
 239 <222> LOCATION: (768)...(1231)  
 W--> 241 <221> exon  
 242 <222> LOCATION: (1232)...(1364)  
 W--> 244 <221> intron  
 245 <222> LOCATION: (1365)...(1431)  
 W--> 247 <221> exon  
 248 <222> LOCATION: (1432)...(1568)  
 W--> 250 <221> intron  
 251 <222> LOCATION: (1569)...(1852)  
 W--> 253 <221> exon  
 254 <222> LOCATION: (1853)...(1980)  
 W--> 256 <221> intron  
 257 <222> LOCATION: (1981)...(2243)



## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/006,611

DATE: 04/30/2002

TIME: 14:47:06

Input Set : A:\06501-094001.TXT

Output Set: N:\CRF3\04302002\J006611.raw

```

W--> 259 <221> exon
      260 <222> LOCATION: (2244)...(2301)
W--> 262 <221> intron
      263 <222> LOCATION: (2302)...(3102)
W--> 265 <221> exon
      266 <222> LOCATION: (3103)...(3299)
W--> 268 <221> intron
      269 <222> LOCATION: (3300)...(5103)
W--> 271 <221> exon
      272 <222> LOCATION: (5104)...(5310)
W--> 274 <221> intron
      275 <222> LOCATION: (5311)...(5454)
W--> 277 <221> exon
      278 <222> LOCATION: (5455)...(5876)
W--> 280 <400> 3
      281 ggagatccag ctgctgcggc ggctgcggca tcggaatgtg atccagcttg tggacgtgct      60
      282 gtacaatgag gagaagcaga agatatatcc tgtgggtgga gtgggctggg gtggcccctg      120
      283 tgttaggggc tggaaacctt ctgcaaggcc tctggcagca atagtgtctac atgtcatcct      180
      284 gtggtgcctg tcagctcatc aggcagggga gcaaggcatg gggcttccac ctggtgccag      240
      285 cctgttctga gcagtgtggc tgggactggg catggcctca cagggaactg gggcctatgt      300
      286 acattgacag ggccccggct ggttctagag gtttccatgc tgccccctcc cagaggtaga      360
      287 ggttgacacag cctacgttgc atctgggcag tcctgggagc attctgagaa cccagtgcc      420
      288 tgcagcccca actcctggta cccatctctc cctgtggcta gtacaccagc tgatttcagt      480
      289 cctgttgtaa tctatgtgta ctccatgtgg tccaagtcac tgtggtggtc ttgtggacct      540
      290 tgtgagtact gatagggagc gcagaatggc gggagagcag agtgggtggg gtctgttggc      600
      291 ccagcggggc cctccagacc actgttgcta ggagcagggc tcctgggctt ggtgtgctgc      660
      292 tttccttagc gccctacgta tatggtgatg gagtactgcg tatgtggcat gcaggagatg      720
      293 ctggacagtg tgccggagaa gcgcttccct gtgtgccaaag ctcatgggtg agtgccctgc      780
      294 tgggtgcagg aggagcagcc attgtcagga aaccaggtg tttctgggcc cccagttttt      840
      295 aaccagcca atgtgcttag ggttaccctc ttgttaggcc ctgtggtccc gctgccctgc      900
      296 agagccatag tgggtctgag tctgttccag tgctcccagg ttcagcagaa tcacatcccc      960
      297 tgggttagcag agaacaaagg gaagggaagg gaaggaaagc agccagaggg gaaacctggc      1020
      298 tccctggggc tgggcagcag tgactgccag ttgccctgtg taattttagt ggcccagcct      1080
      299 tctgactctc aggtctgttt gcctgagccc taaacatcta tcaccttgta ggccaggctc      1140
      300 catgagtctc ccaaacttca tatcagactt atgtaggtag catggtatgg gctgagacac      1200
      301 tgtggggcct gagccagtcc caccatttca ggtacttccg ccagctgatt gacggcctgg      1260
      302 aatacctaca cagccagggc attgttcaca aggacatcaa gccgggcaac ctgctactca      1320
      303 ccaccaatgg cacactcaag atctccgacc tcggtgttgc cgaggtaggc accatgtgca      1380
      304 gggatcatgg gccgcttctc ctgagctgcc ctgactctca ctgccctgca ggccctgcac      1440
      305 cctttcgctg tggatgacac ctgccggaca agccagggct ccccgccctt ccagcctcct      1500
      306 gagattgcca atggactgga cactttttca ggtttcaagg tggacatctg gtcagctggg      1560
      307 gtcacactgt aagtgtcttg tgtgtaccct gtagcagatg gggggctgtg ggttttccct      1620
      308 agtgttcttg ggcctttttg cccacagtgt gtggctagca ggttggacat tccaggctctg      1680
      309 tgggtgtggt tcctcaccct accccacccc actccacagg gttttgcttg cacacagatg      1740
      310 taggtgccat gactgcacat ctaccagtta acatgtgtcc tgtctgggag ttggggcacc      1800
      311 tgtcctctgg tctccagtgt ggccagcact gacactcttt tcctatgtga agttacaaca      1860
      312 tcaccacggg cctgtaccca tttgaggggg acaatatcta caagctcttt gagaacattg      1920
      313 ggagaggaga cttcaccatc ccttgtgact gcggcccacc actctctgac ctactccgag      1980
      314 gtgggcactc ctaaataccc caaatgttag gacagcaagg gacagagccc ctggtctgga      2040

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/006,611

DATE: 04/30/2002

TIME: 14:47:06

Input Set : A:\06501-094001.TXT

Output Set: N:\CRF3\04302002\J006611.raw

315	ggggttctga	ccttactgtc	aggacagcct	ttgtccgcca	ggatgggagg	tttctgagat	2100
316	tgcttcccc	catctggggc	cggggtgggt	gggtggggtc	tcagtgtat	ggggcctagg	2160
317	aaggccaagg	ggatggatgc	tgtagtgggt	ctgtagcaca	aagcaggcac	ctgtacact	2220
318	cacttatctc	ttctgtccta	cagggatgtt	ggagtatgag	ccggccaaga	ggttctccat	2280
319	ccgacagatt	aggcagcaca	ggtgagcatg	gccggcctgt	ctcagcctgc	tgggggtctg	2340
320	agctgagaac	atggtctcag	agggtgctagg	tcatcacagg	agtaaggatc	agtgtgctgt	2400
321	gtgtattgat	gtctgggaag	gctgtgtgtg	aacttggggt	gtgacagggg	tgcccaatgc	2460
322	aggcctccct	acctttatca	ttttgttcag	gagtgcaggc	gttatgtggc	ctgagaagct	2520
323	gtagatttca	gggcctagaa	ttagagacgg	atcctcccat	ggtggggagg	gaggagtaga	2580
324	tggggaagtg	tcactttgga	tcccagctgt	tccttgGCCa	tctggacatg	gaaatgtgtc	2640
325	tagggaggcc	aacagggaagc	gtgaggcatg	gtgtctttcc	tcacctgagg	ctaagagcct	2700
326	tctgggtaac	agtggagcct	ctgtcctccc	tttgtttatt	taccagctgg	tcagagcctt	2760
327	tgggtccagg	cttctctgtc	ctcttctccc	ttcatgctag	actgagactg	gctcagctgg	2820
328	gtgtccccc	gtgaggcctt	ctagcctata	cgtgttcaag	gcgggtggga	ctataggtgc	2880
329	agggacctga	ttgcccaccc	tagtccaagg	cgtgtgggt	gtcatcagtg	ggtggtggtt	2940
330	tgtgccagtg	ctatgggtgt	taggctacct	caagcctgta	gccggagcac	taaggcctcg	3000
331	tcttatgtaa	ggacagccat	ggtgtgggct	ttggtgggta	ttggccagcc	gtggtcacag	3060
332	tgctggcac	ctgatgtctg	tgtgtcactt	ggccttcttt	agctggttcc	ggaagaaaca	3120
333	ccctctggct	gaggcgtctg	tacctatccc	accaagccca	gacactaagg	accgctggcg	3180
334	cagtatgact	gtagtgcctt	acctggagga	cctgcatggc	cgtgcggagg	aggaggagga	3240
335	ggaagacttg	tttgacattg	aggacggcat	tatctacacc	caggacttca	cagtgcctgg	3300
336	taagctggct	tggcgcagct	cctactggag	ctggtgactt	tgtgcaactct	ggggctggtc	3360
337	cccttcccaa	gtctccagcc	agctaacatg	agccaccagg	actgccaaag	ccatcctggt	3420
338	ggctgtggca	tttcaactctg	ggctagatga	agggtccct	ggctgcatct	agcaggagga	3480
339	ggggaaccct	ggagggcagt	gggtaggggc	cctgagacag	ccacctgagg	gagggtccag	3540
340	tggccctcgg	tcctggccat	gootgacctt	atatcgctt	cttccccagg	tgtcgaggag	3600
341	gcggccgagg	cagggttag	cgaggatgca	tgcgacacat	gcatgtggaa	gagccagggc	3660
342	gcaggccttc	ctggagagga	gcccaggagg	gggtttgggg	ctttagtgtg	gtccctgtc	3720
343	tgtgtcccca	cccatgtcct	ccataaagct	ttgtccactg	tgtctgcagg	tggatgcttg	3780
344	ccgcgacttc	cctcctgtca	ctaccctgac	aggctcccca	ccagggttcc	agagaacatg	3840
345	cctgggtcca	aggcctgagc	taggtcctca	gtgccagggt	ggccaccagc	caggggctct	3900
346	tggggccttt	gttctctgtg	cctgcatgcc	agtcctcact	agctcctggc	ctttcaaata	3960
347	gctttgggtg	gagggttaagg	accttgggct	actgtgtctc	ctgtagcaat	tgagagttct	4020
348	aatagcagtg	cccgctgggt	gccagggtgga	atccacaagg	acagggtatac	acctgatgtc	4080
349	cagtatgggc	cttggccaca	gcccctttcta	agggtttaaag	catccctatg	tgggaatagt	4140
350	gtcttctact	ctgtcacgtg	gagcccttgt	ctagactgtc	ccacaggctg	ggctcctggc	4200
351	tgagagctgg	tttctctgct	ggggagaaga	tgtacttagg	tgtgtggttg	atgagggacc	4260
352	cttaaggctg	ctgtgggttg	aagggaaggca	agggtctggg	gacactgggt	ggccatggag	4320
353	cccatattgtc	aaatggggta	gtgttgacaca	gagtgaagtg	accgtgctct	gaggatagcc	4380
354	tgatccctct	gtacttgcca	tgagggtcgg	actctgcagc	aacaggacag	gggctttcta	4440
355	ctcagtgcct	tgtgtggagg	aggggacaga	tgtcttctca	gagtccacct	gacctcaagc	4500
356	ctcagtccca	tgcagagtga	gccagagtgg	gtgtgtctag	tgtggccaag	tcagagggtt	4560
357	tgggagagaa	attctggatc	caggagcgtg	ggcagtgggc	tgtgtgtctg	gttccacagc	4620
358	cgcattgcca	agcactggac	tgtggagtta	catgtagaca	ctgacctctg	gagcctggga	4680
359	agcttcagga	gaggccatct	tttgtcccac	tgcgagggca	ggccaacaga	gcaagctggt	4740
360	ctgcagccct	cagctggatg	atctccttcc	cgggtgtcat	cgcagctagt	agctcccagg	4800
361	ccgaatgctt	catctccttg	tgctgtact	gagggtctag	agcctctccc	ttggagagct	4860
362	ctgtgagctg	gtgtgggct	gccaggcta	gacaggcagg	tgagcgtggg	catgctgcag	4920
363	gaggggccagg	gcatagcact	gtgaaggcag	tgggcctgct	tgcccttgga	gctactgagg	4980

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/006,611

DATE: 04/30/2002

TIME: 14:47:06

Input Set : A:\06501-094001.TXT

Output Set: N:\CRF3\04302002\J006611.raw

```

364 ggtgggtggc accagaggct agagcacctc cgaccagcct ctgtcacagt tggggctggc 5040
365 tgggccctgg ggctttgagc tacctgcccc ttggctcaag ctatgcttgc catcttcccg 5100
366 taggacaggt cctggaagag gaagtgggtc agaatggaca gagccacagt ttgccaagg 5160
367 ctgtttgtgt gaatggcaca gagccccagc tcagcagcaa ggtgaagcca gaaggccgac 5220
368 ctggcaccgc caacctgctg cgcaagggtgt gctccagcaa caagatccgc cggctctcgg 5280
369 cctgcaagca gcagtgactg aggcctacag gtgggcatgg gcctgggtcc agccatccct 5340
370 ggtgttcaca gtgggtgtct gctgggctcc tagctccttc ccgtagggca gtgctgcaag 5400
371 ggggaagggtc tgggtggttga ggtggtaacta agtgaccacc cattctacca acagtgtgtc 5460
372 atcaggatct ctgggcagggt gtccctgcaa ggctgggttt tccaggcctg cctgtccact 5520
373 cacttcggga cgttggagcc gagggcggac ctgctgcccc agaagcaactt tatgtcgaga 5580
374 ccactggccg gccttgccctg catgccgccc tgcgagcctc gctgtctttg ggttggtttc 5640
375 ttttttttta ataaaacagg tggatttgag ctatggctat gaggggtgtt ggaaatatgg 5700
376 agcaggcggg gcacagggtg gcctgcagag aaaaccaga gcaaacaat atgcagagac 5760
377 atttatgatt aaccagacaa cacgaccaac cacagagggc gcagggcagg gagtgggcag 5820
E--> 378 gcactcacag cgagtctgcc ctatcttttg gcaataaata aagcttggga aacttg 5876<210> 4
379 <211> LENGTH: 33
380 <212> TYPE: DNA
381 <213> ORGANISM: Artificial Sequence
W--> 383 <220> FEATURE:
384 <223> OTHER INFORMATION: Artificially Synthesized Primer Sequence
W--> 386 <210> SEQ ID NO:
E--> 386 <400> SEQUENCE: 4
387 gatgaattcc gaaggacaga ggacaaagag tgg 33
E--> 389 <210> SEQ ID NO: 5

```

↑ insert hard  
return here

## RAW SEQUENCE LISTING ERROR SUMMARY

DATE: 04/30/2002

PATENT APPLICATION: US/10/006,611

TIME: 14:47:07

Input Set : A:\06501-094001.TXT

Output Set: N:\CRF3\04302002\J006611.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:3; Line(s) 378

Skipped Sequences(NEW RULES):

Sequence(s)\_\_\_missing. If intentional, please use the following format for each skipped sequence.

&lt;210&gt; sequence id number

&lt;400&gt; sequence id number

000

Seq#:4

## VERIFICATION SUMMARY

PATENT APPLICATION: US/10/006,611

DATE: 04/30/2002

TIME: 14:47:07

Input Set : A:\06501-094001.TXT

Output Set: N:\CRF3\04302002\J006611.raw

L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:235 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:238 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:241 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:244 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:247 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:250 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:253 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:256 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:259 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:262 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:265 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:268 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:271 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:274 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:277 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:280 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:378 M:254 E: No. of Bases conflict, LENGTH:Input:4 Counted:5878 SEQ:3  
L:378 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:9  
L:378 M:252 E: No. of Seq. differs, <211> LENGTH:Input:5876 Found:5878 SEQ:3  
L:386 M:282 W: Numeric Field Identifier Missing, <210> is required.  
L:386 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:3 differs:4  
L:389 M:214 E: (33) Seq.# missing, SEQ ID NO:4